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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/058,741	01/28/2002	Ichiro Ueno	02049C/HG	5747

1933 7590 10/05/2004  
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EXAMINER  
LISH, PETER J

ART UNIT 1754	PAPER NUMBER
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DATE MAILED: 10/05/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/058,741	<b>Applicant(s)</b> UENO ET AL. <span style="float: right;">cf</span>	
	<b>Examiner</b> Peter J Lish	<b>Art Unit</b> 1754	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 19 July 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-48 is/are pending in the application.
- 4a) Of the above claim(s) 1-18 and 34-48 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 19-33 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Election/Restrictions***

Applicant's election without traverse of Group II, claims 19-33 in the reply filed on 7/19/04 is acknowledged. Claims 1-18 and 34-48 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 19, 23-26, 28, and 31-33 are rejected under 35 U.S.C. 102(b) as being anticipated by Sato et al. (JP 09-053085).

Sato et al. teach a process for the preparation of fuel from municipal waste, otherwise known as refuse derived fuel (RDF). The process comprises drying the waste, separating and removing the metals and glass from the organic waste, molding the waste, carbonizing the waste, and optionally activating the waste. After molding and carbonization, the carbonized waste is split up, wherein a portion is maintained for use as a solid fuel, a portion is mixed back in with incoming waste during the molding stage, and a portion is activated by steam activation. The activated carbon product is used to deodorize exhaust gases.

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Because the carbonized waste is mixed back in with new waste in the molding step, it is held that the waste is preliminarily carbonized, the preliminary carbonized products are molded, and the molded products are carbonized. No difference is seen between the process of Sato et al. and that of the instantly claimed invention.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 20-22, and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sato et al. as applied above.

Regarding the temperatures used for the preliminary carbonization and the carbonization, Sato et al. does not explicitly teach a temperature range for the carbonization, however, it would have been obvious to one of ordinary skill at the time of invention to perform the carbonization at a temperature within the claimed ranges, such as between 600 and 800 °C, as these temperatures are known to be useful for carbonization and furthermore because doing so is seen to be the optimization of a known process, which could have been determined through routine experimentation, and is held to be obvious by *In re Boesch*, 205 USPQ 215.

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Regarding the O/C and the H/C atomicity ratios of the wastes, it would have been obvious to one of ordinary skill at the time of invention to utilize any municipal waste in the process of Sato et al., including those with atomicity ratios within the claimed ranges.

Regarding the limitation of molding the waste to produce briquettes, Sato et al. do not explicitly teach the forming of briquettes, however, the molding of waste into briquettes for use as a solid fuel source is well known in the art and it would have been obvious to one of ordinary skill at the time of invention to use the molding operation of Sato et al. for the production of briquettes, because Sato et al. aim to produce a solid fuel source.

Claims 19-28, and 31-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sato et al. (JP 09-053085) alone or in view of Shulz (US 4,052,173).

Sato et al. teach a process for the preparation of fuel from municipal waste, otherwise known as refuse derived fuel (RDF). The process comprises drying the waste, separating and removing the metals and glass from the organic waste, molding the waste, carbonizing the waste, and optionally activating the waste. After molding and carbonization, the carbonized waste is split up, wherein a portion is maintained for use as a solid fuel, a portion is mixed back in with incoming waste during the molding stage, and a portion is activated by steam activation. The activated carbon product is used to deodorize exhaust gases. The drying step is performed utilizing the gas released from the carbonization step, which is inherently at a temperature suitable for carbonization, therefore it is expected that a preliminary carbonization of the waste will take place under the conditions of the drying stage.

Sato et al. do not explicitly teach a temperature at which the drying process is performed. Shulz teaches a process for the conversion of municipal wastes into fuel wherein the drying of organic waste takes place at temperatures between 200 and 900 °F (93 - 482 °C) by utilizing the gas released from the subsequent pyrolysis, or carbonization of the waste. It would have been obvious to one of ordinary skill at the time of invention to perform the drying operation of Sato et al. at a temperature within the range taught by Shulz while utilizing the gas released from the carbonization operation, as doing so is known to achieve the desired effect. In doing so, it is expected that such an operation would yield at least partial carbonization of the waste during the drying operation.

Regarding the temperatures used for the preliminary carbonization and the carbonization, Sato et al. does not explicitly teach temperature ranges for the individual operations, however, it would have been obvious to one of ordinary skill at the time of invention to perform the operations at a temperature within the claimed ranges, as doing so is seen to be the optimization of a known process, which could have been determined through routine experimentation, and is held to be obvious by *In re Boesch*, 205 USPQ 215. Additionally, Shulz teaches the drying (preliminary carbonization) of the waste at a temperature of between about 93-482 °C and the pyrolysis, or carbonization, of the waste at a temperature of between about 482-1093 °C. It would have been obvious to one of ordinary skill at the time of invention to perform the corresponding operations of Sato et al. at temperatures within the ranges taught by Shulz, as doing so is known to achieve the desired effect.

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Regarding the O/C and the H/C atomicity ratios of the wastes, it would have been obvious to one of ordinary skill at the time of invention to utilize any municipal waste in the process of Sato et al., including those with atomicity ratios within the claimed ranges.

Regarding the limitation of molding the waste to produce briquettes, Sato et al. do not explicitly teach the forming of briquettes, however, the molding of waste into briquettes for use as a solid fuel source is well known in the art and it would have been obvious to one of ordinary skill at the time of invention to use the molding operation of Sato et al. for the production of briquettes, because Sato et al. aim to produce a solid fuel source.

Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sato et al. alone or in view of Shulz as applied to claim 19 above, and further in view of Gulley et al. (US 4,561,860).

Sato et al. does not explicitly teach the addition of coal or coke to the waste before the molding process. Gulley et al. teaches a process for the formation of municipal wastes into a solid fuel source wherein the wastes are dried and then molded with coal dust in a pellet press to produce pellets, or briquettes. The coal is taught to have a beneficial effect on the pelleting machine and the fuel pellets containing the coal have the advantages of being more stable and more similar to conventional fuels in appearance and combustion characteristics, thereby increasing their marketability. The pellets can also be handled and burnt more easily in conventional equipment. It would have been obvious to one of ordinary skill at the time of invention to add coal to the waste materials in the molding process of Sato et al. in order to produce a fuel source with the benefits taught by Gulley et al.

Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sato et al. alone or in view of Shulz as applied to claim 19 above, and further in view of Daugherty et al. (US 5,562,743).

Daugherty teaches the formation of solid refuse derived fuel pellets from municipal or industrial wastes. Daugherty also discusses the role of binders in the formation of such pellets. Daugherty teaches that binders such as hydraulic cements and organic based materials are often incorporated into the molding of the pellets in order to increase the density and integrity of the pellets. Daugherty also teaches that an alkaline earth metal hydroxide binder has the additional effect of lowering the sulfur content of the gases that result upon the burning of the refuse derived fuel. It would have been obvious to one of ordinary skill at the time of invention to use a binder in the molding operation of Sato et al. in order to achieve the benefits taught by Daugherty et al.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: US 5,525,196.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter J Lish whose telephone number is 571-272-1354. The examiner can normally be reached on 9:00-6:00 Monday through Friday.



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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman can be reached on 571-272-1358. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

PL



STUART L. HENDRICKSON  
PRIMARY EXAMINER